

Translation

PATENT COOPERATION TREATY

PCT/EP2003/008508



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 8352 WO S GI-RU	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/008508	International filing date (day/month/year) 01 August 2003 (01.08.2003)	Priority date (day/month/year) 07 August 2002 (07.08.2002)
International Patent Classification (IPC) or national classification and IPC F16H 57/02		
Applicant ZF FRIEDRICHSHAFEN AG		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 5 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 31 January 2004 (31.01.2004)	Date of completion of this report 05 July 2004 (05.07.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

Form PCT/IPEA/409 (cover sheet) (July 1998)

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International application No.

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I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages _____ 2-7 _____, as originally filed
pages _____, filed with the demand
pages _____ 1, 1a _____, filed with the letter of _____ 03 June 2004 (03.06.2004)
- ☒ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages _____ 1-5 _____, filed with the letter of _____ 03 June 2004 (03.06.2004)
- ☒ the drawings:
pages _____ 1/4-4/4 _____, as originally filed
pages _____, filed with the demand
pages _____ 2/4, 3/4 _____, filed with the letter of _____ 03 June 2004 (03.06.2004)
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig. _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-5	YES
	Claims		NO
Inventive step (IS)	Claims	1-5	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-5	YES
	Claims		NO

2. Citations and explanations

Prior art cited in the search report:

D1: DE 100 09 486 A (ZF MERITOR LLC MAXTON)

12 October 2000

D2: US-A-5 020 385 (RADER JOSEF) 4 June 1991

D3: DE 41 23 493 A (DAIMLER BENZ AG) 21 January 1993

1. Independent claim 1

1.1 Novelty

Document D1 is considered the closest prior art and discloses, in line with the features of claim 1, a:

bearing arrangement in a gearbox housing (12), comprising at least two gear wheels arranged one behind the other on coaxial shafts (26, 28) that each rotate independently of the other, one of said shafts (26) having a bearing at one end and the other shaft (28) having a bearing at the opposite end, the two bearings (50, 40) each being held in the gearbox housing.

The subject matter of the present claim 1 differs

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therefrom in that:

at least one other bearing, which can absorb radial and axial forces, is provided between the two shafts (4, 5).

The present application therefore satisfies the criterion in PCT Article 33(2) because the subject matter of the only independent claim, claim 1, is novel over the prior art as defined in the Regulations (PCT Rule 64.1 to 64.3).

1.2. Inventive step

Proceeding from the cited prior art, the present invention can be considered to address the problem of devising a simple, cost-effective and space-saving bearing arrangement in a gearbox housing.

The solution as per claim 1 appears not to be known from any of the searched documents taken individually or to be suggested by the prior art taken as a whole.

The present application therefore appears to satisfy the criterion in PCT Article 33(3) because the subject matter of claim 1 appears to involve an inventive step (PCT Rule 65.1 and 65.2).

1.3. Industrial applicability

The subject matter of claim 1 also appears to meet the requirements of PCT Article 33(4), since it appears that it can be made and used at least in the field of automotive engineering.

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1.4. Claims dependent on claim 1

Dependent claims 2 to 5, which disclose further embodiments of the invention according to claim 1, also appear to meet the requirements of PCT Article 33(2) to (4).